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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,782	06/26/2003	Etsuo Oogami	040302-0327	4066

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EXAMINER	
HODGE, ROBERT W	

ART UNIT	PAPER NUMBER
1795	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/603,782	OOGAMI, ETSUO	
	Examiner	Art Unit	
	ROBERT HODGE	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-13,18 and 22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-13,18 and 22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/25/08 has been entered.

Response to Arguments

Applicant's arguments filed 6/25/08 have been fully considered but they are not persuasive. Applicant states that the Soltis reference does not teach “a packing case for accommodating the battery cell which is provided with an opening to expose the electrode tab of the battery cell to the outside of the packing case” and further state that the insulating wrapper 20 of Soltis corresponds to the film of the present claims. Contrary to applicant’s interpretation the Examiner clearly stated in the Final Rejection dated 3/27/08 that the layer 16 of Soltis corresponds to applicants’ recited “film” of the present claims and that layer 20 corresponds to applicant’s recited “packing case” of the present claims. Soltis provides a pair of electrode tabs 166 and 162 that are connected to the power generating element and protrude from the layer 16, i.e. the film. The layer 20 envelopes the battery cell that is contained within layer 16 and provides an opening to expose the electrode tab of the battery cell to the outside of the packing case.

Applicant's further state that the secondary references do not make up for the supposed deficiency of Soltis, however as clarified above Soltis does not contain said deficiency.

Applicant states that the combination of Nortoft with Chaloner-Gill does not teach "a packing case for accommodating the battery cell which is provided with an opening to expose the electrode tab of the battery cell to the outside of the packing case". As was stated in the Final Office Action dated 3/27/08, the interior layers 36 and 38 of Chaloner-Gill corresponds to applicants' recited "film" of the present claims and that exterior layers 40 and 42 correspond to applicant's recited "packing case" of the present claims. And since Nortoft actually states that the preferred structure of housing the cells can be found in the Chaloner-Gill reference and Nortoft teaches a completed battery cell having electrode tabs protruding from the enclosures the combination would be obvious as provided in the Final Office Action 3/27/08.

Therefore the prior art rejections will be maintained. The Examiner acknowledges newly added claim 22 which will be addressed in the grounds of rejection below.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 2-4, 6, 8, 9, 18 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 2,870,235 hereinafter Soltis.

Regarding claim 13, as seen in Figure 1, Soltis teaches a battery pack, as seen in figures 9-11, 14, 17 and 18, Soltis teaches a plurality of battery packs stacked on one another in a stacking direction, wherein the individual battery pack comprises at least one battery cell having a power generating element (Cathode 14, Anode 10 and Separator 12) sealed in a film 16 and a pair of electrode tabs (22, 24, 162 and 166) protruding from the film, a packing case 20 for accommodating the battery cell, which is provided with an opening to expose the electrode tab to extend out from the packing case linearly on one side of the module battery, wherein the opening of the packing cases are all arranged in the stacking direction at one side of the module battery (as seen in the above cited figures), wherein the battery packs include a first battery pack and second battery pack, and the battery cells of the first and second battery packs are connected with each other via the electrode tabs of the respective battery cells (see figure 11), see also column 2, lines 35-66, column 3, lines 14-21, column 4, lines 5-63 and column 6, lines 38-54.

Regarding claim 2, Soltis teaches that all of the openings of the packing case are covered so as to make the stack battery packs air tight (figure 14 column 2, lines 61-64 and column 4, lines 46-61).

Regarding claims 3, 4 and 18, Soltis teaches space provided between walls of the battery packs adjacent to each other by a tapering effect of the completed laminate battery pack as seen in figure 17, between the laminate edges of the battery packs 160.

Regarding claims 6 and 8, Soltis teaches the packing case is comprised of a pair of case halves 40 and 42 that are symmetrically formed with respect to a plane as seen in figure 8(a) (column 3, lines 14 et seq.).

Regarding claim 9, Soltis teaches that each of the packing cases of the battery packs is provided with a flange having sides to be aligned as the packing cases are stack, as seen in figure 17 the laminate edges of 160 act as flanges and are aligned with one another.

Regarding claim 22, as seen in figure 14, Soltis teaches a battery pack holder (84 with 88 and a wax coating applied over everything including a wrapper applied over the wax coating) which holds the stacked battery packs together, wherein each of the openings of the packing cases are covered with the battery back holder so as to make the stacked battery packs air tight (column 4, lines 29-50).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Soltis as applied to claim 3 above, and further in view of U.S. 6,821,671 hereinafter Hinton.

Soltis does not teach a cooling fin in the space.

Hinton teaches a battery pack for cooling battery cells that includes a cooling fin provided in hollow spaces (figure 4, column 4, lines 30-38).

At the time of the invention it would have been obvious to a person having ordinary skill in the art to include cooling fins in the battery packs of Soltis as taught by Hinton in order to provide additional cooling means for maintaining the battery cells at their optimal operating temperature, thereby extending the life of the battery.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Soltis as applied to claim 6 above, and further in view of U.S. 5,688,615 hereinafter Mrotek.

Soltis does not teach a locate pin for aligning the battery cell within the battery pack via a through-hole in the battery cell.

Mrotek teaches a battery cell provided within a housing that utilizes an alignment pin, to line up the battery cell within the housing (figure 6, column 5, line 66 – column 6, line 37).

At the time of the invention it would have been obvious to a person having ordinary skill in the art to include an alignment pin in Soltis as taught by Mrotek in order to provide a simplified means of assembling the battery cell within the housing thereby making sure everything is perfectly aligned before completing the assembly process.

Claims 10, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,773,848 hereinafter Nortoft in view of U.S. Patent No. 5,445,856 hereinafter Chaloner-Gill.

Regarding claims 11 and 13 as seen if figures 1a and 1b Nortoft teaches a plurality of battery packs stacked on one another in a stacking direction, wherein the individual battery pack comprises at least one lithium ion battery cell having a power generating element, a pair of electrode tabs 2 and 3 that extend out of a flexible packing

case and the openings for the tabs are arranged linearly on one side of the battery module, wherein a first electrode tab 2, from a first packing case of the first battery pack 1, is connected to a second electrode tab 2' that extends out from a second packing case of the second battery pack 1' (see also column 3, line 65 – column 4, line 11).

Nortoft does not teach that the battery cell is sealed in a film. Nortoft does state in column 4, lines 1 et seq. that "The exact design structure of the cells is not relevant to the present application, but they may be as described in U.S. Patent No. 5,445,856, i.e. flat wound cells housed in a thin foil laminate package".

As seen in figure 3, Chaloner-Gill teaches a protective multilayer laminate for covering an electrochemical cell such as a lithium battery, wherein the laminate comprises interior layers 36 and 38 (i.e. sealing the battery in a film) and exterior layers 40 and 42 (i.e. packing case) (column 3, line 24 – column 5, line 3).

At the time of the invention it would have been obvious to a person having ordinary skill in the art to provide a protective multilayer laminate as the flexible packing material in Nortoft (as suggested by Nortoft, column 4, lines 1-4) as taught by Chaloner-Gill in order to provide a multilayer laminate that protects the battery as well as inhibiting penetration of oxygen or oxygen and water, thus increasing the overall life of the battery.

Regarding claim 10, as seen in figures 2 and 2b Nortoft teaches that the laminated edges (i.e. flanges) of the battery packs 1 and 1' are connected to a circuit board 5 and folded such that the battery packs 1 and 1' are on opposite sides of the

circuit board and thus the circuit board acts as a spacer between the two battery packs in the stacking direction.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nortoft in view of Chaloner-Gill as applied to claim 13 above, and further in view of U.S. 5,879,831 hereinafter Ovshinsky.

Nortoft as modified by Chaloner-Gill does not teach a motor vehicle comprising a module battery.

Ovshinsky teaches a battery pack that includes a plurality of packing cases provided therein that are spaced a part from each other to allow fluid to flow there through (abstract, column 3, line 24 – column 5, line 47, column 7, lines 36-60, column 9, line 21 – column 10, line 51, column 12, lines 1-3, column 13, line 46 – column 19, line 25). Ovshinsky also teaches that it is well known for batteries to power motor vehicles (column 1, lines 21-25).

At the time of the invention it would have been obvious to a person having ordinary skill in the art to provide the module battery of Nortoft as modified by Chaloner-Gill in a motor vehicle as taught by Ovshinsky and properly scale the battery for its intended use in the vehicle, whichever use that may be, such as replacing an internal combustion engine or supplementing the ancillary electrical systems that would normally require a mechanical alternator that is powered by the engine as well, in order to provide a vehicle that has reduced pollution production or none at all either by completely replacing the internal combustion engine or by supplementing it.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT HODGE whose telephone number is (571)272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert Hodge/
Examiner, Art Unit 1795